AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1.   (Previously Presented)   A bone system model comprising a mineralized matrix, a layer of osteoblasts at confluence and/or osteoblast nodules on said matrix, and osteoclasts on said layer and/or said nodules.

2.   (Previously Presented)   The bone system model of claim 1, wherein the model mimics the human bone system.

3.   (Previously Presented)   The bone system model of claim 1, wherein the mineralized matrix comprises collagen and calcium phosphate and/or calcium phosphate derivatives.

4.   (Previously Presented)   The bone system model of claim 1, wherein the mineralized matrix comprises collagen and hydroxyapatite.

5.   (Previously Presented)   The bone system model of claim 1, wherein the ratio of osteoclasts to osteoblasts is approximately 1/10 to 1/25.

6.   (Previously Presented)   The bone system model of claim 1, wherein the osteoblasts and/or osteoclasts are genetically modified.

7.   (Withdrawn) A method of selecting a matrix for reconstituting a bone system model, characterized in that a matrix is subjected to the following process:

-       depositing of a layer and/or nodules of osteoblasts at confluence onto the matrix,

-       depositing isolated osteoclasts onto the layer and/or the nodules,

-       observation of the invasion of the osteoclasts through the layer and/or the nodules of osteoblasts,

-       selection of the matrices on which the osteoclasts are located between the matrix and the layer and/or the nodules of osteoblasts.

8.   (Withdrawn) The method of selection as claimed in claim 7, characterized in that it also comprises a step of observation of the resorption of the matrix, and in that the matrices on which a resorption is observed are selected.

9.   (Withdrawn) Artificial matrices selected using the method as claimed in claim 7.

10.   (Withdrawn) A bone system model that is cancerous, characterized in that the model as claimed in claim 1 is used, modified as follows:

-       The osteoblasts and/or the osteoclasts are derived from normal, ovariectomized and/or orchidectomized animals,

-       cells derived from cancer cell lines are also deposited.

11. (Withdrawn) A bone system model affected by osteoporosis, characterized in that the model as claimed in claim 1 is used, modified as follows:

- the osteoblasts and/or the osteoclasts are derived from normal, ovariectomized and/or orchidectomized animals, the osteoporosis has been induced chemically *in situ*, and/or results from knock-out animals which are transgenic for any molecules for which the modulation of expression induces a decrease in bone mass.

12. (Withdrawn) A bone system model affected by osteomalacia, characterized in that the model as claimed in claim 1, is used, modified as follows:

- the osteoblasts and/or the osteoclasts are derived from normal animals, and wherein the osteomalacia has been induced chemically *in situ*, and/or results from animals that are knock-out for the vitamin D receptor or for any other molecules capable of inducing osteomalacia.

13. (Withdrawn) A bone system model affected by rheumatoid arthritis, characterized in that the model as claimed in claim 1 is used, modified as follows:

- the osteoblasts and/or the osteoclasts are derived from normal animals, the rheumatoid arthritis has been induced chemically *in situ*, and/or results from knock-out animals which are transgenic for any molecules capable of inducing rheumatoid arthritis or from animals having been given injections of collagen type II, or of any other substances capable of inducing an articular inflammation mimicking rheumatoid arthritis.

14.   (Withdrawn) A bone system model affected by osteomyelitis, characterized in that the model as claimed in claim 1 is used, modified as follows:

-        at least one bacterial or viral strain chosen from *Enterobacter cloacae*, staphylococcus aureus, beta-hemolytic streptococcus A, *Haemophilus influenzae* type b, salmonallae, *Pseudomonas*, and/or pneumococci is added to the model system.

15.   (Canceled)

16.   (Withdrawn) A test for tumor cell aggressiveness, characterized in that tumor cells are taken from a patient by biopsy, and the cells taken are deposited into a model as claimed in claim 1 according to the pathological state of the patient, in order to observe the development of secondary bone cancer.

17.   (Previously Presented)   A test for the toxicity of a chemical compound, characterized in that at least one concentration of said compound is tested on a model as found in claim 1.

18.   (Previously Presented)   A bone system model of claim 1 wherein the osteoblasts and/or the osteoclasts are derived from normal, ovariectomized and/or orchidectomized animals, wherein osteoporosis has been induced chemically *in situ*, and/or results from knock-out animals transgenic for any molecule for which the modulation of expression induces a decrease in bone mass.

19.   (Previously Presented)   A bone system model of claim 1, wherein the osteoblasts and/or the osteoclasts are derived from normal animals, and wherein osteomalacia has been induced in said model chemically *in situ*, and/or results from animals that are knock-out for vitamin D receptor or for any other molecules capable of inducing osteomalacia.

20.   (Previously Presented)   A bone system model of claim 1, wherein the osteoblasts and/or the osteoclasts are derived from normal animals, and wherein rheumatoid arthritis has been induced in said model chemically *in situ*, and/or results from knock-out animals are transgenic for any molecules capable of inducing rheumatoid arthritis or from animals having been given injections of collagen type II, or of any other substances capable of inducing an articular inflammation mimicking rheumatoid arthritis.

21.   (Previously Presented)   A bone system model of claim 1, wherein at least one bacterial or viral strain chosen from *Enterobacter cloacae*, staphylococcus aureus, beta-hemolytic streptococcus A, *Haemophilus influenzae* type b, salmonallae, *Pseudomonas*, and/or pneumococci is added to the model system.